OVERVIEW
Philips Lighting wants to double their current throughput of B-Pods. Philips would like to consider manufacturing process changes to make the assembly of the B-Pod safer and more efficient. The team was tasked with developing recommendations to decrease assembly time and part lead time within the plant. The team was tasked to double the current production level of 500 B-Pods by decreasing the assembly time of or by organizing and optimizing the layout of the workspace to ensure there are no wasted operator movements or no inner-plant transportation delays of parts.

OBJECTIVES
The main objective of the project was to analyze the process to find waste in material or time spent that can be reduced when increasing the throughput of the project. The goal was to decrease the non-value-added time spent in the process as well as decrease the amount of movement the operator engages in during the assembly. Finally, an emphasis on safety was also implemented to minimize the risk of injury to the operator using calculations in software that will analyze the frame of the operator and advise on whether or not the specific motion could potentially be harmful long-term.

APPROACH
- The team proposed a solution that would help decrease the overall cycle time of the employee stationed at the B-Pod Assembly area.
- The team created the current VSM with Kaizen Blitzes.
- The team then created a future VSM incorporating the proposed solution along with the suggested Kaizen Blitzes.
- Time studies were completed for the assembly process and the average process time was 1.85 minutes, accounting for personal and rating allowances.
- The team completed Cumulative Trauma Disorder analysis for the bending and lifting of the B-Pods using a 3D static strength prediction program, or 3DSSPP, software.
- The team redesigned and 3D printed a jig for easier assembly.

OUTCOMES
Lean Recommendations were created in order to maximize the efficiency of the process by decreasing non-value-added time. Through this analysis, the team created three main recommendations, pictured below:
- By making these changes, Philips will be able to save over $900/year.
- Standard Work Instructions were created so that any operator would be able to effectively assemble the B-Pod without significant time or quality variation between operators.
- Operator will lift B-Pod with two hands to avoid shoulder injuries.
- A secondary jig was designed to enhance the ease of assembly for the operator.

<table>
<thead>
<tr>
<th>Replenishment Walking Time/week (non-value)</th>
<th>Forklift (no bin size change)</th>
<th>Forklift (bin size change)</th>
<th>Prepackaged Bins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Reduction/week</td>
<td>52.6 minutes</td>
<td>52.9 minutes</td>
<td>53.4 minutes</td>
</tr>
<tr>
<td>Additional B-Pods/month</td>
<td>113</td>
<td>114</td>
<td>128</td>
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<tr>
<td>Yearly Savings</td>
<td>$912.07</td>
<td>$916.71</td>
<td>$924.65</td>
</tr>
</tbody>
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